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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,973	04/21/2004	Gabriel Iftime	A1682Q1-US-DIV	5410

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EXAMINER

SADULA, JENNIFER R

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/828,973

Applicant(s)

IFTIME ET AL.

Examiner

Jennifer R. Sadula

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10,13,14 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10,13,14,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Amendment***

The amendment filed 2/8/05 has been considered. The following Office Action is a complete response to the amendment and arguments filed. The response provided by the applicant has been read and given careful consideration. Responses to those arguments are presented after the complete rejection of remaining claims. Rejections of the previous office action not repeated below are withdrawn based upon the amendments and arguments of the Applicant.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10, 13, 14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanelt et al., U.S. Patent No. 6,300,454 ("Hanelt").

Applicants claim a composition comprised of a liquid crystal and a compound having formula 4. Hanelt teaches liquid crystalline nematic organosiloxanes wherein the mesogenic sidegroup is of the formula $R^2-X^1-(A^1-X^2)_a-R^3-A^2$ and is attached to the backbone $R^1_pSiO_{q/2}$ which anticipated Applicants' Z4 wherein the "p" and "q" of Hanelt are the degree of polymerization (specified by Applicants as e") (column 2). This compound can be read left to right to anticipate Applicant's claimed invention wherein R^2 anticipates (S4); X^1 anticipates A4;

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C4 is anticipated by the A¹ (when a=1 or is multiple rings when a>1, X² is a bond, as is R³) and A² anticipated D4. More specifically, with regard to Applicants' claims, D4 is anticipated when A² is Cl or any other halogen (3:12-19) and C4 is anticipated by being at least one aromatic ring. With regard to Applicants' claim 13 A4 is anticipated by the carboxyl group. With regard to Applicants' claim 14 S4 is anticipated as being a straight chain alkyl. With regard to Applicants' claim 16 Z4 is anticipated as a vinyl group is a "C1-C10 hydrocarbon radical" (as the term "hydrocarbon" includes C=C groups) and is further anticipated when the formula is formula 9 of Hanelt (column 5) wherein R8 is an acryl or methacryl group further comprising a straight chain alkyl group to anticipate S4. With regard to Applicants' claim 17 the alkyl chain is anticipated as well as the substituted alkyl chain.

Claims 10, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hall et al., U.S. Patent No. 6,511,612 ("Hall").

Hall teaches LCP materials of the formula shown in the abstract wherein formula I represents Z4 and of the pendant moiety, Y-(CH₂)_n anticipates S4, Q anticipates A4 when q=0 and Z is a bond and the mesogenic group anticipates C4-D4 wherein D4 is Cl and C4 is the dual ring unit. More specifically, with regard to Applicants' claims, D4 is anticipated when Z of the mesogenic group is Cl (10:11-17). C4 is anticipated by being at least one aromatic ring as C4 is anticipated by A-W₁-D wherein A and D are both rings. With regard to Applicants' claim 13 A4 is anticipated by the carboxyl group. With regard to Applicants' claim 14 S4 is anticipated as being a straight chain alkyl as Y can be CH₂.

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Claims 10, 13, 14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al., U.S. Patent No. 6,312,618 ("Wu").

Wu teaches polar diphenyldiacetylene liquid crystals and compositions comprising them (such as eutectic mixtures comprising such) (abstract) wherein the asymmetric polar LC materials are shown in the formula of the abstract. This compound, which may be a side chain liquid crystal moiety, as R1 can be a polymerizable alkenyl group backbone chain (4:22-30) can be read right to left to anticipate Applicant's claimed invention when $b''=2$ wherein R1 plus the ring anticipates (S4)₂; $-C=C-C=C-$ anticipates A4; C4 is anticipated by the Y-substituted ring and X anticipated D4. More specifically, with regard to Applicants' claims, D4 is anticipated when X is Cl. C4 is anticipated by being at least one aromatic ring. With regard to Applicants' claim 13 A4 is anticipated by the alkene group shown (Examiner notes that the carbons are drawn with 5 valency- but it is clear this is a misprint as the carbons must each be double-bonds). With regard to Applicants' claim 14 S4 is anticipated as being a straight chain alkyl, and as a cycloalkyl. With regard to Applicants' claim 16 Z4 is anticipated as a vinyl group as detailed above. With regard to Applicants' claim 17 the alkyl chain is anticipated as well as the substituted alkyl chain, again as detailed above.

Claims 10, 13, 14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Parri et al., U.S. Patent No. 5,720,900 ("Parri").

Parri teaches side-chain liquid crystalline copolymers of formula A wherein Pm anticipates Applicants' Z4; m anticipates Applicants' e"; A1 anticipates Applicants' S4; Z1 anticipates Applicants' A4; Ring A anticipates Applicants' C4 and R2 anticipates Applicants'

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D4. More specifically, with regard to Applicants' claim 10, D4 is anticipated when R2 is substituted with a halogen atom. C4 is anticipated by being at least one aromatic ring. With regard to Applicants' claim 13 A4 is anticipated by a carboxyl group or carbonyl group. With regard to Applicants' claim 14 S4 is anticipated as being a straight chain alkyl, and as a cycloalkyl. With regard to Applicants' claim 16 Z4 is anticipated as a Pm backbone as detailed above. With regard to Applicants' claim 17 the alkyl chain is anticipated as well as the substituted alkyl chain, again as detailed above.

Allowable Subject Matter

Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed 2/8/05 have been fully considered but they are not persuasive. Applicants' sole argument is that the composition is now patentable, however Examiner notes that the compound was previously rejected as claims 11 and 12. Furthermore, the limitation of the electron donor moiety having a negative Hammett constant does not impart patentability as the Hammett constant is a representation of how capable a compound is of electron donation and acceptance: electron donor groups all have negative Hammett constants.

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Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer R. Sadula whose telephone number is 571.272.1391. The examiner can normally be reached on Monday through Friday, 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F. Huff can be reached on 571.272.1385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

JRS
April 25, 2005



**MARK F. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700**